

CLAIMS

What is claimed is:

1. A method for fabricating a wear-resistant assembly of a turbine outer case and a turbine vane, comprising the steps of:

providing:

a turbine outer case; and

a turbine vane that, when assembled to the turbine outer case, is supported on the turbine outer case in a support region whereat a vane-support area of the turbine vane contacts a case-support area of the turbine outer case; and

welding a wear-resistant material to a weld area of at least one of the vane-support area and the case-support area.

2. The method of claim 1, including an additional step, before the step of welding, of removing material from the weld area to which the wear-resistant material is to be applied in the step of welding.

3. The method of claim 1, wherein the step of providing includes the step of providing each of the turbine outer case and the turbine vane made of a nickel-base alloy, and wherein the step of welding includes the step of selecting the wear-resistant material as a cobalt-base alloy.

4. The method of claim 1, wherein the step of welding includes the step of welding the wear-resistant material to the case-support area.

5. The method of claim 1, wherein the step of welding includes the step of welding the wear-resistant material to the vane-support area.

6. The method of claim 1, wherein the step of providing includes the step of providing at least one of the turbine outer case and the turbine vane that have previously been in service in a turbine engine.

7. The method of claim 6, including an additional step, before the step of welding, of removing material from the weld area to which the wear-resistant material is applied in the step of welding.

8. The method of claim 6, including additional steps, after the step of welding, of:

assembling the turbine vane to the turbine outer case;

placing the assembled turbine vane and turbine outer case into service in a turbine engine; thereafter

taking the assembled turbine vane and turbine outer case out of service; and thereafter

repairing the weld area using a metal spray technique, there being no step of weld repairing of the weld area after the step of welding and before the step of repairing.

9. A method for fabricating a wear-resistant assembly of a gas turbine outer case and a gas turbine vane, comprising the steps of:

providing:

a gas turbine outer case; and

a gas turbine vane that, when assembled to the gas turbine outer case, is supported on the gas turbine outer case in a support region whereat a vane-support area of the gas turbine vane contacts a case-support area of the gas turbine outer case, wherein at least one of the gas turbine outer case and the gas turbine vane has previously been in service; thereafter

removing material from a weld area of at least one of the vane-support area and the case-support area; and thereafter

welding a wear-resistant material to the weld area.

10. The method of claim 9, wherein the step of providing includes the step of providing each of the gas turbine outer case and the gas turbine vane made of a nickel-base alloy, and wherein the step of welding includes the step of selecting the wear-resistant material as a cobalt-base alloy.

11. The method of claim 9, wherein the step of welding includes the step of welding the wear-resistant material to the case-support area.

12. The method of claim 9, wherein the step of welding includes the step of welding the wear-resistant material to the vane-support area.

13. The method of claim 9, including additional steps, after the step of welding, of

assembling the gas turbine vane to the gas turbine outer case;

placing the assembled gas turbine vane and gas turbine outer case into service in a gas turbine engine; thereafter

taking the assembled gas turbine vane and gas turbine outer case out of service; and thereafter

repairing the weld area using a metal spray technique, there being no step of weld repairing of the weld area after the step of welding and before the step of repairing.

14. A method for fabricating a wear-resistant assembly of a gas turbine outer case and a gas turbine vane, comprising the steps of:

providing:

a gas turbine outer case; and

a gas turbine vane that, when assembled to the turbine outer case, is supported on the gas turbine outer case in a support region whereat a vane-support area of the gas turbine vane contacts a case-support area of the gas turbine outer case, wherein the gas turbine outer case has previously been in service; and thereafter

removing material from the case-support area; thereafter

welding a wear-resistant material to the weld area; thereafter

assembling the gas turbine vane to the gas turbine outer case; thereafter

placing the assembled gas turbine vane and gas turbine outer case into service in a gas turbine engine; thereafter

taking the assembled gas turbine vane and gas turbine outer case out of service; and thereafter

repairing the weld area using a metal spray technique, there being no step of

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weld repairing of the weld area after the step of welding and before the step of repairing.

15. The method of claim 14, wherein the step of providing includes the step of providing each of the gas turbine outer case and the gas turbine vane made of a nickel-base alloy, and wherein the step of welding includes the step of selecting the wear-resistant material as a cobalt-base alloy.